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Notes on Fournier's Mexican Species and Varieties of *Bromus**

By C. L. SHEAR

In the spring of 1900, Mr. A. H. Baldwin, an artist of the Department of Agriculture, then employed in the Division of Agrostology, visited Paris and while there examined some of the specimens of *Bromus* cited by Fournier and preserved in the Herbarium of the Museum of Paris. Through the courtesy of the Director he was permitted to make sketches of these plants and to take spikelets from each; he also made notes in connection with his sketches, and by aid of these it has been possible to identify some of the forms treated by Fournier. While there is still much to be desired in order to make a thoroughly satisfactory disposition of the Mexican species, it is thought best to present the information thus acquired in the hope that it may be of some use to students of Mexican grasses.

With the exception of *Ceratochloa festucoides* the species and varieties are taken up in the order in which they are given by Fournier in his work.

BROMUS EXALTATUS Bernh. Linnaea, 15: Lit. 90

B. subalpinus Rupr. Bull. Acad. Roy. Brux. 9: 237. 1842, is cited as a synonym of this. Consultation of this citation shows this name to be a *nomen nudum*. A comparison of three of the specimens cited by Fournier (Gal. 5769 & Liebm. 488 and 501) with the original description of Bernhardt leaves considerable doubt as to whether they are correctly referred. Only an examination of the type which we have been unable to locate will decide the question. Dr. Trelease informs me that it is not in the Bernhardt Herbarium. No. 925, C. L. Smith, Sierra de San Felipe, Sept., 1894, seems to belong here.

BROMUS ANOMALUS Rupr. Fourn. Mex. Pl. 126. 1886

This is attributed to Ruprecht in Bull. Acad. Roy. Brux. 9²:

* Fournier, Mexicanas Plantas, etc., Pars secunda. Graminae, 125-128. 1886.

236. 1842. It is, however, without description in the place cited by Fournier and must be regarded as first published by him as cited. The question arises, however, as to what should be considered the type of this species. Ruprecht l. c. cites a single specimen, no. 5757 H. Galeotti collected "dans les forêts du Cerro San Felipe près d'Oaxaca à 8000 pied d'élévation." The same number is also cited by Fournier and his specimen should, we think, be considered the type of the species rather than the first specimen cited by him which it seems to us best to take as a rule. The sketch and spikelet from Galeotti's no. 5757 in the Museum of Paris shows this plant to be inseparable from *Bromus Porteri* (Coul.) Nash. Fournier speaks in his description of a conspicuous tongue-shaped ligule, but Mr. Baldwin's sketch of the specimen does not show a ligule any larger than is usually present in *Bromus Porteri*, and we feel safe in referring *Bromus anomalus* to *B. Porteri* (Coul.) Nash as a synonym.

All the following forms belong to the subgenus *Ceratochloa*.

CERATOCHLOA FESTUCOIDES Beauv. Fourn. l. c.

This name used by Beauvois in the index to his *Agrost.* 158, is taken up for the *Ceratochloa unioloides* Beauv. *Agrost. Ind.* 164 and *Explan. Pl.* 11. 1812. We can find nothing in Beauvois to justify the assumption that these were regarded by him as synonyms. The inference we make from a comparison of similar cases in Beauvois is that he was either proposing a new species or transferring Link's *Bromus festucoides* to *Ceratochloa*. From the fact that he uses the combination *Ceratochloa unioloides* in his explanation of plates it appears to be clear that he did not intend to supplant the name *Festuca unioloides* by *Ceratochloa festucoides*. Supposing, however, that it were a clear case of synonymy, we can see no reason for adopting the name *festucoides* instead of *unioloides*. In any case its use in the genus *Bromus* is invalidated by the existence of an earlier *Bromus festucoides* Link, Schrad. *Journ.* 2: 315. 1799.

An examination of a drawing of the type of *Bromus unioloides* H.B.K. and a spikelet from the same shows that the doubt indicated by the writer in *Bull.* 23: 50. Div. *Agrost. U. S. Dept. Agr.* regarding the synonymy of the species was well founded and

that the *Festuca unioloides* Wild. is specifically distinct from *Bromus unioloides* H.B.K.

Kunth.* regarded the two as distinct and proposed the name, *Bromus Willdenowii* for Willdenow's plant. *Ceratochloa Schraderi* Kunth has priority but is also a doubtful synonym, so that we regard the adoption of *Bromus Willdenowii* Kunth. as the safest.

Bromus Willdenowii is evidently not common in Mexico, as there are no specimens in the National Herbarium and Fournier, l. c. says that he has seen no Mexican specimens. He, however, cites two numbers—Aschenb. 146, 674—on the authority of some one else apparently. We have seen none of the specimens cited by Fournier, but his description appears to have been based upon a form of *Bromus Willdenowii*, probably the one which we called *B. unioloides haenkeanus* (Presl.) Shear† but which should stand according to our present understanding of the matter **B. Willdenowii haenkeanus** (Presl.) n. comb. Fournier restricts *Ceratochloa* to this one species, but according to our interpretation of it as a subgenus all the following forms should also be referred to it.

BROMUS HOOKERI Fourn. Mex. Pl. 127. 1886

This name was proposed by Fournier for the plant referred by Hooker and Arnott in the Botany of Capt. Beechey's Voyage 119. 1841 to *B. purgans* Rich. What Hooker's plant really was we are unable to say. It was collected in Kamtschatka. The name *B. Hookeri* we do not regard as tenable, however, in any case, as there was already a *Bromus Hookerianus* Thurber, Wilkes U. S. Expl. Exp. 17²: 493. 1874.

BROMUS HOOKERI var. *a* SCHAFFNERI Fourn. l. c.

This plant as shown by the drawings and spikelet from Fournier's type no. 42 Schaffner in Herb. Franq., can not be separated from *B. carinatus Hookerianus* (Thurb.) Shear, so far as we can determine from a careful comparison of the spikelets from the two types. Fournier's plant has a panicle rather more lax than typical *Bromus carinatus Hookerianus*, otherwise the plants appear alike and can not be satisfactorily separated.

* Kunth. Rev. Gram. 1: 134. 1835.

† Bull. Div. Agrost. U. S. Dept. Agr. 23: 52. 1900.

BROMUS HOOKERI var. β *MARGINATUS* Fourn. *l. c.*

This is given as a synonym of *B. marginatus* Nees in Steudel Syn. Pl. Gram. 322. 1854, but differs from that plant as we understand it in its rather lax, somewhat drooping panicle, longer, more acute, and smooth empty glumes, and scabrous flowering glume. We propose for this plant the name *Bromus proximus* nom. nov. The specimen from which the spikelet examined was taken and the sketch made was no. 1488 Botteri & Sumchraet. The first specimen cited by Fournier, which we should prefer to regard as the type of the species, is no. 961 F. Mueller, collected at Orizaba. Nos. 5, 7, 226, Dr. E. Palmer, Saltillo, 898 and no. 171a of the same collector from the city of Durango and vicinity, June, 1896, we should refer to this species.

BROMUS HOOKERI var. γ *SCHLECHTENDALII* Fourn. *l. c.*

We have drawings and spikelets from two of the specimens cited by Fournier—no. 402 Berlandier “inter Tampico et Real del Monte” and no. 1420 bis Virler, San Luis de Potosi. The spikelet from Berlandier’s specimen does not agree with the description which says the flowering glume is very shortly and sparsely pilose. The plant is closely related to *Bromus proximus*, and may perhaps be best referred to it as a variety until more information can be secured regarding it. According to the description, sketches, and spikelets it differs from *Bromus proximus* in the slightly longer and more acute empty glume, and somewhat pubescent flowering glume with a slightly longer awn and a small contracted panicle. This plant we would designate ***Bromus proximus Schlechtendalii*** n. comb. We would refer no. 734 Dr. Edward Palmer’s collection, September, 1896, from the city of Durango and vicinity, to this variety.

BROMUS HOOKERI var. δ *GENUINUS* Fourn. *l. c.*

This the author regards as synonymous with *Bromus purgans* L. Sp. Pl. ed. 2. 1: 113. 1762. The misinterpretation of Linnaeus’s species is evidently due to his reference *l. c.* to Feuillet’s plate. Fournier’s variety was founded upon a part of Bourgeau’s no. 220, collected “in sylva de la desierta Vieja.” According to the sketches and spikelets from the specimen in the Museum of

Paris this differs from *B. proximus Schlechtendalii* in having a large drooping panicle. There is some doubt in our mind as to whether the spikelet we have is from the particular plant of Bourgeau's that was taken by Fournier as his type. The form is of doubtful varietal value but may stand until better known as *Bromus proximus genuinus* n. comb. No. 171 E. Palmer, Durango, June, 1896, belongs here. *B. Schaffneri* (Fourn.) Scribn. & Merrill U. S. Dept. Agr. Div. Agrost. 24: 30. 1901 was founded in part upon the specimen first cited.

BROMUS HOOKERI var. ϵ PUBESCENS Fourn. *l. c.*

This he regards a *B. pubescens* Muhl. which he wrongly interpreted, that plant belonging to the subgenus *Zerna*. According to the sketches and spikelets from 1417 and 1420 collected by Virler at San Luis de Potosi this cannot be distinguished from *Bromus proximus genuinus* and we regard it as a synonym of that variety.

BROMUS HOOKERI var. ζ CANADENSIS Fourn. *l. c.*

This plant he regarded as *B. Canadensis* Mx. We unfortunately have no sketch or spikelets from any of the specimens referred to this variety. From the description we infer, however, that it is at least varietally distinct from the other forms described, but before giving it a name, we prefer to wait until we have had an opportunity to examine authentic specimens of the plant.

The other forms treated by Fournier are *Bromus Hookeri* var. η *ciliatus*, incorrectly regarded as *Bromus ciliatus*; *Bromus Hookeri* var. θ *pendulinus*, regarded as synonymous with *Bromus pendulinus* Sesse, and the two subvarieties α *brevicaulis* and β *longicaulis* without descriptions.

There are several species of the older authors described from Mexican material whose identity is still doubtful and must remain so until the types, if extant, can be studied and redescribed, and no permanent or satisfactory disposition of the Mexican material can be made until these older specimens are understood.

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